

REMARKS/ARGUMENTS

Claims 1, 2 and 4-9 are pending. By this Amendment, claim 3 is cancelled without prejudice or disclaimer, and claim 1 is amended. Support for the amendments to claim 1 can be found, for example, in the present specification at page 11, lines 13 to 16, and in previously presented claim 1. No new matter is added. In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

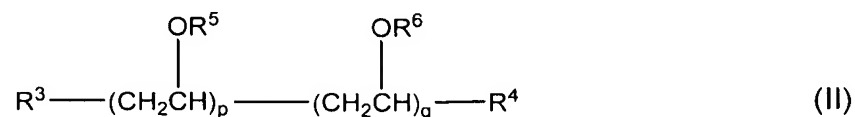
Claim Objection

The Office Action objects to claim. 3. By this Amendment, claim 3 is cancelled, rendering the objection moot.

Rejection Under 35 U.S.C. §103

The Office Action rejects claims 1-9 under 35 U.S.C. §103(a) over U.S. Patent No. 6,261,474 to Egawa et al. ("Egawa") in view of U.S. Patent No. 5,801,132 to Kaneko et al. ("Kaneko"). By this Amendment, claim 3 is cancelled, rendering the objection moot as to that claim. As to the remaining claims, Applicants respectfully traverse the rejection.

Claim 1 recites "[a] refrigerating oil composition, comprising: a refrigerant (A) comprising as a predominant component a C1-C8 hydrocarbon compound; and a base oil (B) comprising a polyvinyl ether represented by formula (II):



wherein each of R³ and R⁴ represents a hydrogen atom, a C1-C18 hydrocarbon group, or a C2-C18 acyl group; R⁵ represents a methyl group; R⁶ represents an ethyl group; p is an integer of 1 or more; and q is an integer of 0 or more; wherein the composition satisfies the following conditions: (i) solubility of the refrigerant (A) in the base oil (B) is 40 mass% or

less at 40°C and 1.2 MPa; and (ii) mixture viscosity of the refrigerating oil composition is 0.1 mm²/s or more at 90°C and 2.3 MPa" (emphasis added). Egawa and Kaneko do not disclose or suggest such a composition.

As indicated above, claim 1 is amended to specify that, in the chemical structure of the base oil, R⁶ is an ethyl group – thus, in formula (II) of claim 1, R⁵ is methyl and R⁶ is ethyl. Egawa does not disclose a single exemplary compound having the structure of the base oil of claim 1. *See* column 17, line 7 to column 18, line 43 (none of the disclosed compounds includes a substituent corresponding to R⁶ that is ethyl). Moreover, there is nothing in Egawa that would suggest preparing a base oil having the particular structure recited in claim 1 – that is, there is nothing in Egawa that would suggest a structure in which substituents corresponding to R⁵ and R⁶ in formula (II) of claim 1 are methyl and ethyl, respectively. Egawa does not disclose or suggest each and every feature of claim 1.

Kaneko does not remedy the deficiencies of Egawa. Kaneko, like Egawa, fails to disclose or suggest a base oil having the particular structure recited in claim 1. Accordingly, the combination of references fails to disclose or suggest each and every feature of claim 1.

Applicants direct attention to Examples 3 to 5 and Comparative Example 3 of the present specification. *See* present specification, pages 25 to 26; Table 3. Examples 3 to 5 are refrigerating oil compositions according to claim 1 (i.e., substituents corresponding to R⁵ and R⁶ in formula (II) of claim 1 are methyl and ethyl, respectively). Comparative Example 3 is a refrigerating oil composition including a base oil having a chemical structure in which substituents corresponding to R⁵ and R⁶ in formula (II) of claim 1 are both ethyl as in Example 1 of Egawa – column 17, lines 13 to 24. The solubility of the refrigerant in the base oil of Comparative Example 3 is 48.5 mass%, which is outside of the scope of claim 1.

Other exemplified refrigerating oil compositions of Egawa (e.g., Example 2 or Example 4) include base oils in which the substituents corresponding to R⁵ and R⁶ in formula (II) of claim 1 are methyl and isobutyl. See Egawa, column 18, lines 17 to 39.

Example	R ⁵	R ⁶
Examples 3 to 5 of the present application	methyl	ethyl
Comparative Example 3 of the present application/Example 1 of <u>Egawa</u>	ethyl	ethyl
Examples 2 and 4 of <u>Egawa</u>	ethyl	iso-butyl

It is apparent from the results in the present specification and would be apparent to one of ordinary skill in the art, generally, that the larger the number of carbon atoms in the substituents corresponding to R⁵ and R⁶ in formula (II) of claim 1, the greater the solubility of the refrigerant in the base oil of respective refrigerating oil compositions. Thus, it is apparent that the solubility of refrigerant in other exemplified refrigerating oil compositions of Egawa, such as Example 2 and Example 4, in which the substituents corresponding to R⁵ and R⁶ in formula (II) of claim 1 are methyl and isobutyl, would be higher than in the refrigerating oil composition of Comparative Example 3 (and thus even further outside the scope of claim 1). Egawa does not disclose a refrigerating oil composition having the refrigerant solubility required in claim 1.

Applicants further note that Egawa discloses using a polyvinyl ether compound as a base oil. See Egawa, Abstract. Kaneko, by contrast, discloses using a polyether compound as an additive to a base oil. See Kaneko, column 2, lines 5 to 10. Reference Examples 1 and 2 of Kaneko demonstrate that using a base oil without additives leads to a deterioration in lubrication properties and causes seizure and fatigue. See Kaneko, TABLE 1. One of

ordinary skill in the art would have been discouraged from replacing the oil composition of Kaneko with the base oil of Egawa in view of the possibility of, e.g., a deterioration in lubrication properties. Accordingly, one of ordinary skill in the art would not have reasonably expected success upon combining the teachings of Egawa and Kaneko as proposed in the Office Action. See MPEP §2143.02 (*prima facie* case of obviousness based on a proposed modification to reference will only stand if one of ordinary skill would have had reasonable expectation of success upon making the modification) (citing *In re Merck & Co., Inc.*, 800 F.2d 1091 (Fed. Cir. 1986)).

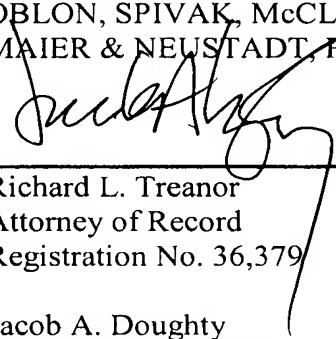
As explained, claim 1 would not have been rendered obvious by Egawa and Kaneko. Claims 2 and 4-9 depend from claim 1 and, thus, also would not have been rendered obvious by Egawa and Kaneko. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

For the foregoing reasons, Applicants submit that claims 1, 2 and 4-9 are in condition for allowance. Prompt reconsideration and allowance are respectfully requested.

Respectfully submitted,

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